BRUHAT BANGALORE MAHANAGARA PALI

Name of the work:- Comprehensive Development of Roads and drains in W
Rajarajeshwarinagara Assembly Constituency under PACKAGE- 2019-20 RR

"DRAFT TENDER SCHEDULE"

Sl No	Description of Items	Unit	Sanction Quantity	Sanction Rate	Quoted Figures
1.	Removing & Refixing stone slabs of drains and pointing in C.M (1:3)as per the direction of Engineer in charge	Sqm	14306.31		
2.	Excavation for road, drains and similar works Earthwork excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5 m, excavated surface leveled and sides neatly dressed, the disposed earth to be leveled neatly after breaking of clods complete as per specifications complete as per specifications. MORTH Chapter 3 as per the direction of Engineer in charge	Cum	5042.62		
3.	Plain cement concrete 1:3:6 mix with crushed stone aggregate 40 m nominal size mechanically mixed, placed in foundation and compacted by vibration including curing complete as per specifications MORTH Specification No. 408 KPWD S.R 2018-19 as per the direction of Engineer in charge	Cum	81.54		
4.	Providing and laying plain/reinforced cement concrete for side drains using M20 nominal mix concrete with OPC at 300 kgs. with 20mm and down size granite metal coarse aggregates at 0.69 cum and fine aggregates at 0.43 cum machine mixed, well compacted for walls and bottom including centering, shuttering, cost of materials, HOM of machinery, curing etc., complete excluding cost of steel as per MORTH specification No. 1500, 1700, 2200. including cost of materials, labour, HOM complete as per specifications.Wall & bottom thickness 15cm as per the direction of Engineer in charge	Cum	209.72		
5.	Providing T.M.T. steel reinforcement for R.C.C. work including straightening, cutting, bending, hooking, placing in position, lapping	Ton	28.08		

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	and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per disign (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 & 2200 TMT Bars Fe 500as per the direction of Engineer in charge						148
6.	Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar, stone hammered dressed in courses not less than 20 cms high, bond stones at 2m. apart in each course including cost of materials, labour, curing complete as per specifications. KBS 5.1.13KSRB 5.2-3 : - do - cement mortar 1:6 KBS 5.1.13as per the direction of Engineer in charge	Sqm	95.40				
7.	Providing and constructing precast concrete solid blocks with compressive strength not less than 3.5 Newton per sqm with cement mortar 1:4 masonry (quoin, Jamb, closer blocks) with solid concrete blocks of size 40x15x20cms conforming to I.S: 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications.-do with solid concrete blocks of size 400*200*200 mm as per the direction of Engineer in charge	Sqm	6279.20				
8.	Providing ruled pointing to coursed stone masonry with cement mortar, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, HOM curing complete as per specifications.– do – cement mortar 1:3as per the direction of Engineer in charge	Cum	14678.40				
9.	Providing and laying in position plain cement concrete of Mix 1:2:4 with OPC @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregtes @ 0.53cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM curing omplete as per specifications. Specification No. KBS 4.1, 4.2KBS No.5.4KBS 5.1.13as per the direction of Engineer in charge	Cum	506.72				

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10.	Providing & laying precast drain cover slab of 100 mm thickness in CM 1:3 including cost of all materials, labour, curing, transportation, loading, unloading etc. complete as per the directions of the Engineer In Charge (0.9 x 0.60 x 0.1)Data rate as per the direction of Engineer in charge	Sqm	3017.49		
11.	Providing granite slabs of selected quality roughly dressed and fixed in cement mortar (1:6) including fixing curing etc., complete - do - 10 cms thick as per the direction of Engineer in charge	Sqm	904.84		
12.	Providing two line dressing to granite stone slab / granite stone masonry as per specifications. KBS 5.1.13 as per the direction of Engineer in charge	Sqm	904.84		
13.	Providing chamfering edges to stone slab 2.5 cms. Wide as per specifications. (only chamfered length shall be recorded) KBS 5.1.13 as per the direction of Engineer in charge	Sqm	4222.40		
14.	Providing and Fixing RCC Precast Cover Slab of 250 mm Thick for Drains in Cement Concrete M-20 using graded granite Jelly of 20 mm and down size with steel Reinforcement, including form work lift charges, curing and concrete finished surface on both sides etc., as per drawing and the direction of Enginner-in-charge.Data Rate as per the direction of Engineer in charge	Sqm	180.98		
15.	Removing and resetting of kerb stones.as per the direction of Engineer in charge	Rmt	6110.85		
16.	Providing and fixing pre cast solid concrete kerb stones of size 450x150x500 mm made out of CC 1:2:4 and finished with CM 1:3 plastering and finishing cutting ete., complete.as per the direction of Engineer in charge	Sqm	6236.00		
17.	Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8as per the direction of Engineer in charge	Sqm	3566.80		
18.	Fabrication supplying and erecting M.S. tubular trusses of all spans as per approved drawing & design with prefabricated steel applications using quality material and are durable,	Sqm	43520.00		

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	reliable and corrosion and abrasion resistant. Welding shall confirm to latest structural welding code. Quality shall be of various parameters like shape, size, design, gauge and polish. The entire structure is anchored in RCC column by using 4 nos of M.S. anchor bolts at each support with 1[mm thick base plate and gusset plate. The work includes cutting straightening, bending & hoisting of M.S. pipes and welding wherever necessary and applying one coat of red oxide primer coat to all the members including coat of all materials, labour charges, and use charges of machineries for cutting welding, grinding and erection equipments with all lead and lift, transportation, etc. complete as per specification as per the direction of Engineer in charge.						
19.	Providing and fixing self-supported ribbed high quality, high grade (D 350 MPA Yst Min.) pre- painted Galvalume steel roof sheet coated with bare Galvalume coating AZ 150 @ 150 gms/Smtr 55%AL 45%Zn) by hot dip process , of total coated thickness as specified for different spans with a tolerance of +/- 0.02 mm, according to technical specification confirming to A 792, with NCCA II-1, or ECCA T4 Pencil hardness HB, NCCA standard T-Bend test. The roof should be fastened to the gutter beam, on the external sloping side, at an interval of 51mm Centre to Centre, to a depth of 65 mm with GI anchor bolts and neoprene washers & subjecting the gutter beam to Schmidt, Hammer test to ensure the anchorage of the anchor bolts. The self-supported roofing system should be designed to with stand the wind load (As per IS 875 part-3) & Earthquake load (as per IS 1893) & the design should also comply with any other technical requirements such as turbo ventilators of 0.60 mts. dia and skylights of size 4.26 x 0.60 mts. fixed one in each row @ 10.00 Mtr C/C along the length & hangers for electrical fixtures as per the requirements including cost of all materials &labour for erection, all lead and lift, loading and unloading, HOM of machineries etc., complete as per the standard detailed	Sqm	726.00				

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	Providing & laying precast drain cover slab ... technical specification, design and directions of the engineer in charge of the work - 80 - (a) S- 80 -(a) Span Above 32 Meters upto 35 Meters (b) Material Specification Colour Coated Imported Galvalume Sheet weighing 0.11kg/sqm BMT 1.60 MM APT 1.67 MM tolerance +/- 0.02mmas per the direction of Engineer in charge					
20.	Construction of embankment with approved material Gravel/Murrum with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement Table 300.2 complete as per specifications, including cost of gravel / murrum, watering charges & compaction by vibratory roller to 95% of modified proctors density MORTH Specification No. 305 as per the direction of Engineer in charge	Cum	629.63			
21.	Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/ trap/basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications. Clause 401 of MORTH V Revision. as per the direction of Engineer in charge	Cum	1649.80			
22.	Providing and filling sand in foundation to required depth for sub soil treatment including watering ramming with all lead and lift Complete as per specifications. specification. No. KBS 2.10.2as per the direction of Engineer in charge	Cum	303.67			
23.	Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications. MORTH Specification No. 406 as per the direction of Engineer in charge	Cum	1191.33			

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24.	Providing and applying primer coat with S.S. bitumen emulsion on prepared surface of granular base such as WMM ,including clearing of road surface and spraying primer at the rate of 0.60 kg / sqm using mechanical means complete as per Specifications MORTH Specification No. 502 Complete with all lead and lift and as per the direction of the Engineer-in-Charge.	Sqm	5180.00				146
25.	Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM complete as per specifications Clause 501 of MORTH V revision No. 406 as per the direction of Engineer in charge	Sqm	35068.39				
26.	Providing and applying tack coat using 80/100 grade bitumen(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH/Chapter 5 as per the direction of Engineer in charge	Sqm	79255.80				
27.	Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications. Clause 505 of morth V revision using 40/60 TPH capacity H.M.P. with mechanical paver Gr-II (50mm to 75mm) with 4.5% VG-30 Bitumen. PWD SR 2018-19 Issue Rates as per the direction of Engineer in charge	Cum	2481.87				
28.	Providing and laying bituminous concrete using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled,	Cum	1785.31				

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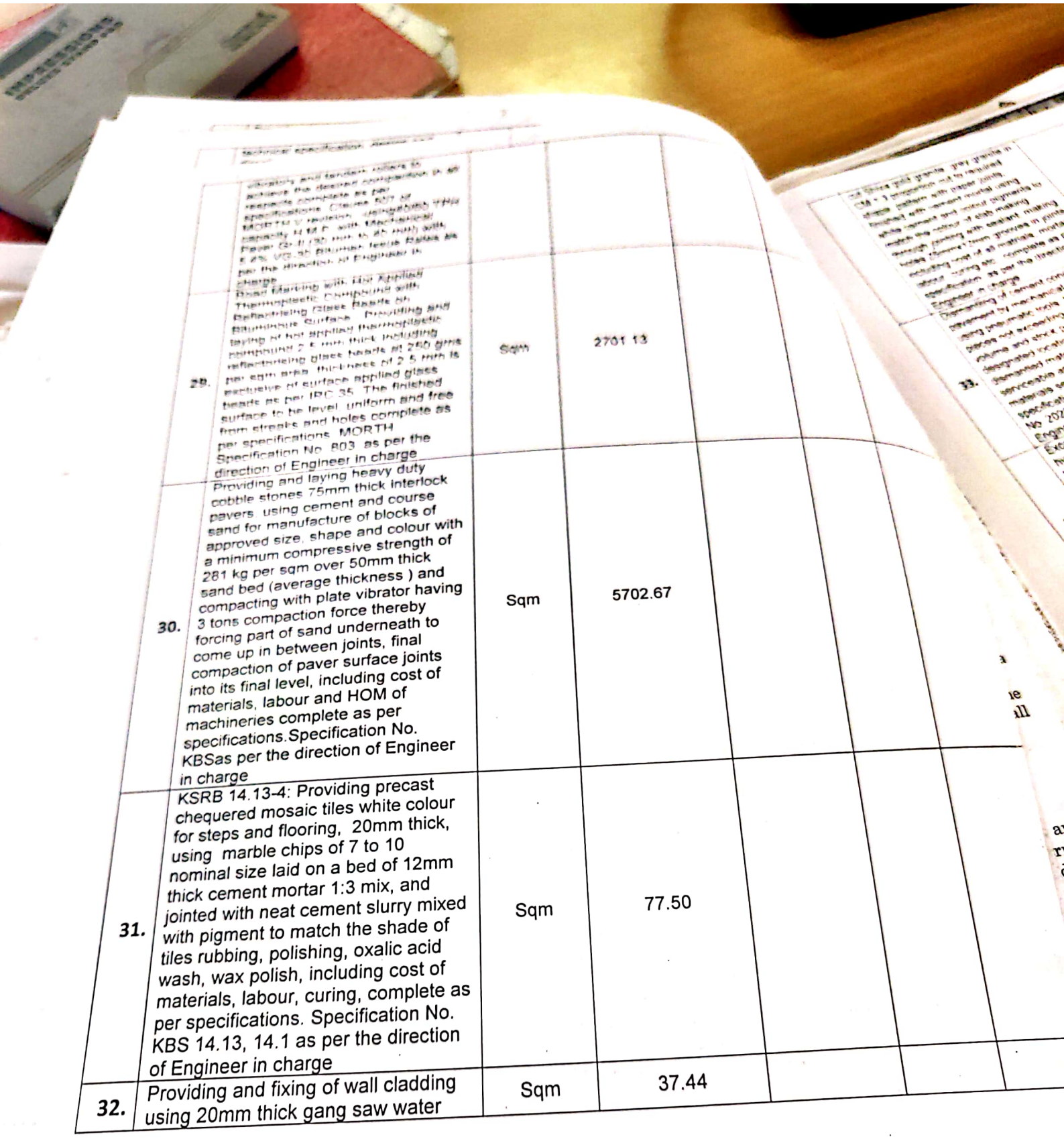

	vibrators and tandem rollers to achieve the desired compaction as per specifications. Clause 507 of MORTH V revision. Using CRS-1 (Cationic Bitumen Emulsion) with Mechanical Paver (3-5 mm to 45 mm) with 5.2% VG-30 Bitumen feeds Basis as per the direction of Engineer in charge					
29.	Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous surface. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC 35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications MORTH Specification No. 803 as per the direction of Engineer in charge	Sqm	2701.13			
30.	Providing and laying heavy duty cobble stones 75mm thick interlock pavers using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications.Specification No. KBSas per the direction of Engineer in charge	Sqm	5702.67			
31.	KSRB 14.13-4: Providing precast chequered mosaic tiles white colour for steps and flooring, 20mm thick, using marble chips of 7 to 10 nominal size laid on a bed of 12mm thick cement mortar 1:3 mix, and jointed with neat cement slurry mixed with pigment to match the shade of tiles rubbing, polishing, oxalic acid wash, wax polish, including cost of materials, labour, curing, complete as per specifications. Specification No. KBS 14.13, 14.1 as per the direction of Engineer in charge	Sqm	77.50			
32.	Providing and fixing of wall cladding using 20mm thick gang saw water	Sqm	37.44			

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	cut Shiva gold granite, grey granite in CM 1 3 proportion cut to required shape, pattern with paper joints, finished with cement mortar using white cement and colour pigments to match the colour of slab making through jointing with sealant, making holes 25mmx12mm grooves in joints including cost of all matrials, mortar labour curing etc complete as per specification as per the direction of Engineer in charge					145
33.	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0 02 cum in volume and stock piling at designated locations and disposal of dismantled materials stacking serviceable and unserviceable materials seperately complete as per specifications MORTH Specification No 2028 as per the direction of Engineer in charge	Cum	37 50			
34.	Excavation for roadwork in soil with hydraulic excavator of 0 90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 as per the direction of Engineer in charge	Cum	2119.00			
35.	Providing and Constructing dry lean cement concrete mix CC 1:5:10 base with OPC 25mm and down size graded granite metal coarse aggregate at 0.86cum and fine aggregates @0.58cum over a prepared sub-base, coarse and fine aggregate conforming to IS: 383-2016,aggregate cement ratio not to exceed 15:1, Aggregate gradation after blending to be as per Table 600-1,optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver, compacting with 8-10 tonnes vibratory roller, finishing and curing complete as per specifications. Clause 601of MORTH V Revision and IS 456 Table-5 do-with OPC at 150 kg/cum and coarse aggregate 0.86cum, fine aggregate 0.58cum using Concrete Batch mix Plant at 75 cum/hr capacity with fixed	Cum	251.15			

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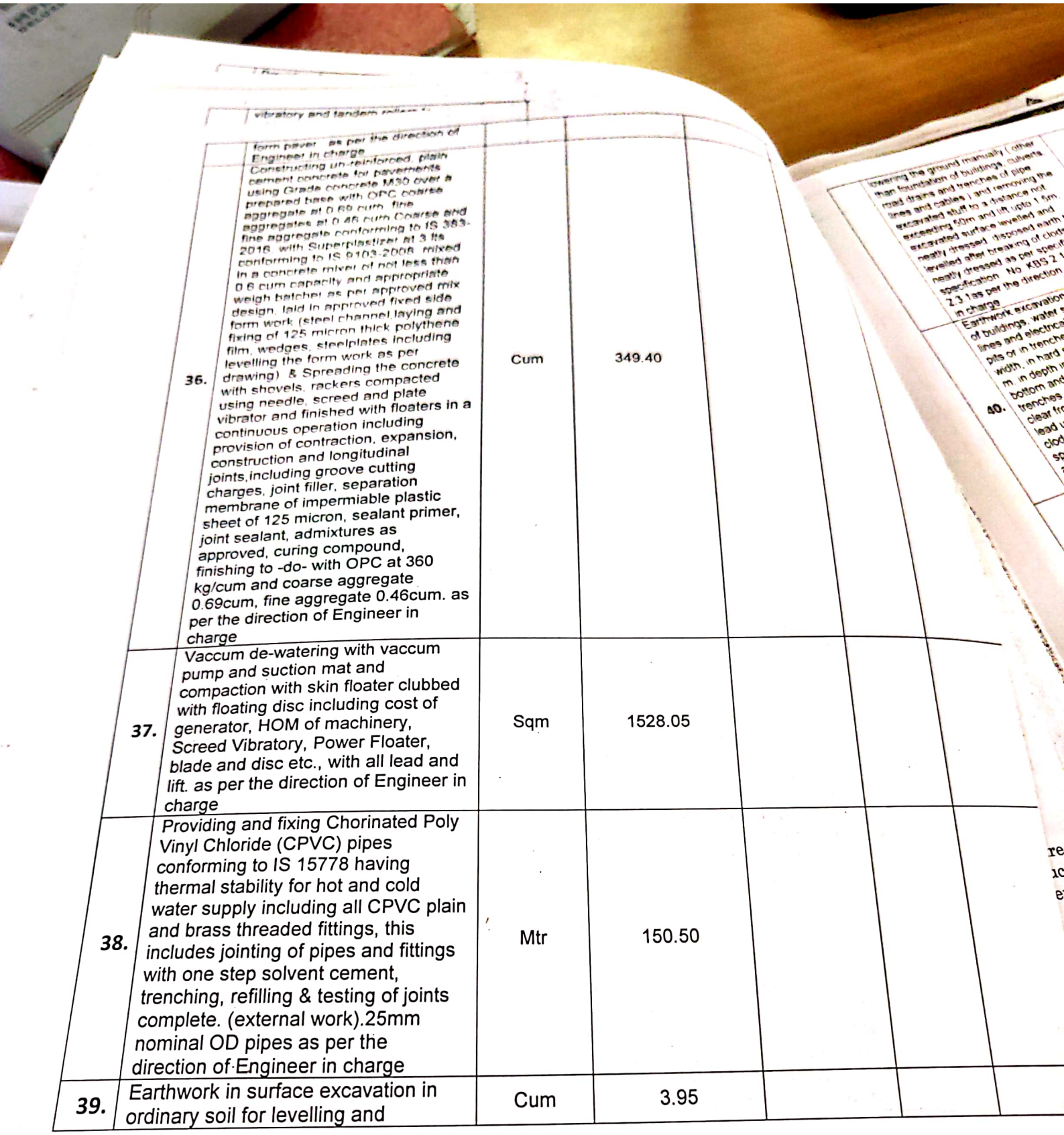

	vibratory and tandem rollers ... form paver as per the direction of Engineer in charge					
36.	Constructing un-reinforced plain cement concrete for pavements using Grade concrete M30 over a prepared base with OPC coarse aggregate at 0.69 cum, fine aggregates at 0.46 cum Coarse and fine aggregate conforming to IS 383-2016 with Superplastizer at 3 lts conforming to IS 9103-2008 mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel laying and fixing of 125 micron thick polythene film, wedges, steelplates including levelling the form work as per drawing) & Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished with floaters in a continuous operation including provision of contraction, expansion, construction and longitudinal joints,including groove cutting charges, joint filler, separation membrane of impermiable plastic sheet of 125 micron, sealant primer, joint sealant, admixtures as approved, curing compound, finishing to -do- with OPC at 360 kg/cum and coarse aggregate 0.69cum, fine aggregate 0.46cum. as per the direction of Engineer in charge	Cum	349.40			
37.	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift. as per the direction of Engineer in charge	Sqm	1528.05			
38.	Providing and fixing Chorinated Poly Vinyl Chloride (CPVC) pipes conforming to IS 15778 having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings, this includes jointing of pipes and fittings with one step solvent cement, trenching, refilling & testing of joints complete. (external work).25mm nominal OD pipes as per the direction of Engineer in charge	Mtr	150.50			
39.	Earthwork in surface excavation in ordinary soil for levelling and	Cum	3.95			

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	lowering the ground manually (other than foundation of buildings, culverts, road drains and trenches of pipe lines and cables) and removing the excavated stuff to a distance not exceeding 50m and lift upto 1.5m. excavated surface levelled and neatly dressed. disposed earth to be levelled after breaking of clods and neatly dressed as per specifications specification. No. KBS 2.1(a) / 2.3.1as per the direction of Engineer in charge					
40.	Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in hard soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(b) / 2.3.5. as per the direction of Engineer in charge	Cum	68.38			
41.	Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @0.892cum and fine aggregates @ 0.465cum machine mixed, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. as per the direction of Engineer in charge	Cum	10.95			
42.	Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications. KBS 5.1.13 as per the direction of Engineer in charge	Cum	23.31			
43.	Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per	Cum	24.86			

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	specifications. KBS 5.1.13 as per the direction of Engineer in charge					
44.	Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. as per the direction of Engineer in charge	Sqm	37.72			
45.	Providing and filling sand in foundation upto plinth to required depth for sub soil treatment including watering ramming with all lead and lift complete as per specifications.specification. No. KBS 2.10.2 as per the direction of Engineer in charge	Cum	158.26			
46.	Providing and injecting chemical emulsion for Pre- constructional Anti-Termite Treatment, creating continuous chemical barrier under and around the column pits, walls, trenches, basement excavation, top surface of the plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surrounding of pipes and conduits, with chloropyriphos emulsifiable concentrates of 20% concentration, including cost of chemical, diluting in water to one percent concentration, labour, HOM of equipments, complete as per specifications. (Plinth area of the building at ground floor only shall be measured) Specification No. KBS : 3.2.6 / 3.2.7 as per the direction of Engineer in charge	Sqm	128.70			
47.	Providing and laying in position reinforced cement concrete of Design mix M25 with OPC cement @ 340kgs, with 20mm and down size graded granite metal coarse aggregates @0.70 cum and fine aggregtes @ 0.47cum, with super plasticisers @ 3 liters confirming to is 9103-1999 reafirmed-2008 at machine mixed, concrete laid in layers not exceeding 15 cms thick, vibrated for all works in foundation for footings, pedastals, retaining walls, return walls, walls (any thickness) including attached pilasters, columnspillars, posts, struts, buttresses, bed blocks, anchor blocks & plinths etc., including cost of	Cum	3.60			

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	all materials, labour, HOM of machinery, curing, complete but excluding cost of reinforcement & as per the direction of Engineer in charge						
48.	Providing and laying in position reinforced cement concrete of design mix M25 with OPC cement @ 340kgs with 20mm and down size graded granite metal coarse aggregates @0.70cum and fine aggregates @ 0.47cum with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008, machine mixed concrete laid in layers not exceeding 15 cms thick, vibrated for all works in ground floor level for roof slabs, staircase, lintles and beams retaining walls, return walls, walls (any thickness) including attached pilasters, columns, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc., including cost of all materials, labour, HOM of machinery, curing, complete but excluding cost of reinforcement as per specifications. Specification No. KBS 4.1, 4.6 as per the direction of Engineer in charge	Cum	5.71				143
49.	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth cills and string courses cost of all materials, labour complete as per specifications. Specification No. KBS 4.6.2as per the direction of Engineer in charge	Sqm	33.40				
50.	KSRB 4-6.2 : Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for suspended floors, landings, balconies and likes, thickness upto 200 mm including cost of all materials, labour complete as per specificaitons for heights more than 3.50m from ground level. - 0 to 5 mtrs. as per the direction of Engineer in charge	Sqm	26.32				
51.	Providing and removing centering, shuttering, strutting, propping etc., for edges of slabs and breaks in floor including cost of all materials, labour complete as per specifications. Specification No. KBS 4.6.2 as per the direction of Engineer in charge	Sqm	3.09				

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	specifications KBS [illegible]					
52.	Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3 - TMT bars Fe 550 as per the direction of Engineer in charge	ton	1.18			
53.	Providing and constructing load bearing wall with solid concrete blocks of size 400x200x200 mm having block density not lessthan 1800 kg/m3 and having a minimum average compressive strength 5.00 N/mm2 confirming to IS 2185 (Part) : 2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials, labour charegs, scaffolding, curing complete as per specifications. KBS No.5.4 as per the direction of Engineer in charge	Sqm	60.33			
54.	Providing 18mm thick cement plaster in single coat with cement mortar 1:6, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. as per the direction of Engineer in charge	Sqm	74.43			
55.	Providing 15mm thick cement plaster in single coat with cement mortar 1:4, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. as per the direction of Engineer in charge	Sqm	53.19			
56.	Providing 12mm thick cement plaster in single coat with cement mortar 1:4, to ceiling including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. as per the direction of Engineer in charge	Sqm	19.80			
57.	Providing lime rendering for plastering to wall and ceiling, including cost of materials, labour, curing complete as per	Sqm	72.99			

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	specifications. as per the direction of Engineer in charge					
58.	Providing and applying two coats with oil bound washable distemper of approved brand and shade on wall surface including priming coat with distemper primer after throughly brooming the surface free from mortar drops and other foreign matter including preparing the surface even and sand paper smooth, cost of materials, labour, complete as per specifications as per the direction of Engineer in charge	Sqm	72.99			1/12
59.	Providing and finishing external walls in two coats with waterproof cement paint of approved brand and shade to give an even shade after throughly brooming the surface to remove all dirt and loose powdered material, free from mortar drops and other foreign matter cost of materials, labour, complete as per specifications. - with primer. as per the direction of Engineer in charge	Sqm	74.43			
60.	Providing and laying Hassan Green granite flooring for staircase, treads and rises using pre polished 20 mm thick water cut green Granite slab laid over existing cement concrete bed in CM 1:3, average 20mm thick including full rounding for nosing , cutting 3 line grooves not more than 2 mm wide for antiskidding, curing etc.,complete. as per the direction of Engineer in charge	Sqm	23.76			
61.	Providing and fixing in position aluminium windows and ventilators as per approved drawings with sliding shutters using three track window frame of size 92x31.75mm bottom section 1.3mm thick, weight 1.07kg/m; sides and top sections 1.3 mm, thick, weight 0.933 kg/m.shutter frame section comprising top and bottom section of size 40mmx18mm, wall thickness 1.25mm. weight 0.417 kg./m. shutter side outer 40mmx18mm. wall thickness 1.25mm. weight 0.417 kg/m, shutter interlock section 40mmx26.7mm wall thickness 1.1 mm. thick, weight 0.469 kg/m, the shutters mounted on nylon rollers with approved quality of fixtures such as aluminium handles tower bolts etc.; providing and fixing 5.5mm. thick plain glass for shutters fitted with rubber beading all aluminium sections including cutting to required length, joints mitred	Sqm	0.72			

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	subdividing the frame tenonned and riveted, in the assembled frame, stiffened with end clips for corners, angles etc., and fixed to the walls, lintels, floor beams/cills as the case may be, with necessary steel screws, raul plugs or teak wood gatties including cutting masonry or concrete and making good the original surface using cement mortar.using aluminium section powdered coated to a minimum of 60-70 microns with exterior durable pure polyester grade powder of approved quality.as per the direction of Engineer in charge					
62.	Providing and fixing M.S.Grill work for windows and ventilators weighing 21kg/sqm using M.S.Flats, or M.S.Squared rods, or combination of M.S.Flats and square rods as per approved design, drawing including cutting steel sections and welding the same to required pattern with a coat of red lead primer, cost of all materials, fixtures, labour and HOM of machinery complete as per specifications as per the direction of Engineer in charge	Sqm	28.80			
63.	Providing and Applying enamel metal Paint two coats (excluding priming coat) over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter including cost of materials labour complete as per specification as per the direction of Engineer in charge	Sqm	1.44			
64.	For roof slab & terraces Providing & applying water proofing to roof slab, terraces, landscape area, podium etc., using modified polyurethane cures (conforming to ASTM C836-84) to give a tough elastomeric waterproof membrane on the surface. The surface shall be cleaned free from dust and other particle before usage. standards & methodology : This compound has a medium viscosity grade with 620% of elongation and shall be done either by roller application/brush application/ spray. This will be applied for a thickness of 1.3mm first layer 0.5mm & 2nd layer 0.8mm. After applying the 2nd layer sand sprinkle shall be done to provide mechanical key. as per the direction of Engineer in charge	Sqm	26.32			
65.	Providing and fixing 1mm thick M.S. sheet garage door with frame and	Sqm	7.14			

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	diagonal braces of size 40x40x6 mm angle iron, 3.15mm thick M.S Gusset plates at the junctions and corners, with handles, stoppers and locking arrangements etc , including applying a priming coat of red lead paint cost of materials, labour, HOM of machinery complete as per specifications Double leaf door of size 2.4x2.4m. Specification as per the direction of Engineer in charge					
66.	Loading and Unloading of Stone Boulder / Stone aggregates /Sand/ Kanker / Moorum. Placing tipper at loading point, loading with front end loader,dumping, turning for return trip, excluding time for haulage and return trip complete as per specifications. Cost of Haulage Excluding Loading and Unloading MORTH -100/ Chapter 1 Case-I : Surface Road as per the direction of Engineer in charge	Cum	36.16			
67.	Providing and fixing pre cast solid concrete kerb stones of size 450x150x500 mm made out of CC 1:2:4 and finished with CM 1:3 plastering and finishing cutting ete., complete. as per the direction of Engineer in charge	No's	830.00			
68.	Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 as per the direction of Engineer in charge	Sqm	149.32			
69.	Providing and laying heavy duty cobble stones 75mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications.Specification No. KB as per the direction of Engineer in charge	Sqm	1003.51			
70.	Providing precast chequered mosaic tiles white colour for steps and flooring, 20mm thick, using marble	Sqm	332.00			

CONTRACTOR

EXECUTIVE ENGINEER

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	chips of 7 to 10 nominal size laid on a bed of 12mm thick cement mortar 1:3 mix, and jointed with neat cement slurry mixed with pigment to match the shade of tiles rubbing, polishing, oxalic acid wash, wax polish, including cost of materials, labour, curing, complete as per the direction of Engineer in charge					
71.	Fabricating, supplying & erecting M.S. Angular Truss for all spans as per approved designs and drawing. The entire truss is anchored suitably by using 4 Nos. of M.S. anchor bolts at each support, with base plate and shoe plate. The work includes cutting, straightening, placing in position of M.S angle and welding wherever necessary, and applying one coat of red oxide primer coat to all the members including cost of all materials, labour charges, & hire charges of machineries for cutting, welding, grinding & erection equipments, etc., complete as per specification as per the direction of Engineer in charge	Sqm	7491.31			
72.	Supplying and fixing new Mangalore tiles on existing reepers as per the direction of Engineer in charge	Sqm	113.50			
73.	Supplying and fixing polished grey granite slab benches of size 5 feet width of seating slab with bottom slab of 75mm th. with 1.5 feet width with two stands strong base with back slab (suport) machine cutting top slab mirror polish with 50 mm Th. with 1.5 feet depth side slab of 100 mm th. 2.5 feet height. including bull nosing of all edges, fixing in CC 1:2:4 including loading & unloading and with all lead and lift etc., complete and executing the work as per the direction of Engineer-in-charge of the work as per the direction of Engineer in charge	Sqm	18.00			
74.	for Pargola as per the direction of Engineer in charge	Sqm	2.00			

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